

In the Claims:

Please amend the claims as follows:

Claim 1 (cancel).

Claim 2 (cancel).

Claim 3 (amended). The compound according to Claim 2 17 wherein the optional substituent on the R₁ or R₂ pyrimidin-4-yl ring is C₁₋₄ alkyl or NR₁₀R₂₀.

Claim 4 (amended). The compound according to ~~any of Claims 1 to 3~~ Claim 17 wherein R₁ or R₂ is an optionally substituted phenyl.

Claim 5 (amended). The compound according to Claim 4 wherein the ~~one or more~~ optional substituents are independently selected from halogen or methoxy.

Claim 6 (cancel).

Claim 7 (amended). The compound according to Claim 4 17 wherein R₃ is hydrogen, -(CR₁₀R₂₀)_n(Y₂)_p, or -(CR₁₀R₂₀)_n CH₃; and Y₂ is -NR₈R₉ or -NR₁₀C(Z)R₈; ~~and R₄ is an optionally substituted phenyl.~~

Claim 8 (cancel).

Claim 9 (cancel).

Claim 10 (amended). A pharmaceutical composition comprising a pharmaceutically acceptable carrier or diluent and a compound according to Claim 17 ~~any of Claims 1 to 9~~.

Claim 11 (amended). A method of treating a cytokine mediated disease in an animal in need thereof which method comprises administering to said animal an effective cytokine mediating amount of a compound according to Claim 17 ~~any of Claims 1 to 9~~.

Claim 12 (original). The method according to Claim 11 wherein the cytokine mediated disease is asthma, adult respiratory distress syndrome, stroke, bone reabsorption diseases, arthritic joint conditions, and other inflammatory diseases.

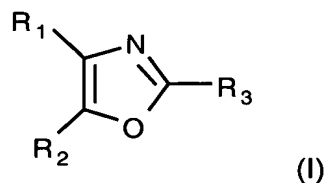
Claim 13 (cancel).

Claim 14 (amended). The method according to ~~any of Claims 11 to 13~~ Claim 11 wherein the mediation of the disease state is by Interleukin-1 (IL-1).

Claim 15 (amended). The method according to ~~any of Claims 11 to 13~~ Claim 11 wherein the mediation of the disease state is by Tumor Necrosis Factor (TNF).

Claim 16 (amended). A method of treating inflammation in a mammal in need thereof which comprises administering to said mammal an effective amount of a compound according to Claim 17 ~~any of Claims 1 to 9~~.

17 (new). A compound of the formula:



wherein:

one of R₁ or R₂ is an optionally substituted aryl ring and the other of R₁ or R₂ is an optionally substituted 4-pyrimidinyl;

wherein when one of R₁ and R₂ is an optionally substituted aryl ring, the ring is substituted by one or two substituents, each of which is independently selected, and which, for a 4-phenyl, 4-naphth-1-yl or 5-naphth-2-yl substituent, is halo, cyano, C(Z)NR₇R₁₇, C(Z)OR₂₃, (CR₁₀R₂₀)_m COR₃₆, SR₅, SOR₅, OR₃₆, halo-substituted-C₁₋₄ alkyl, C₁₋₄ alkyl, ZC(Z)R₃₆, NR₁₀C(Z)R₂₃, or (CR₁₀R₂₀)_mNR₁₀R₂₀;

and which, for other positions of substitution, is halo, (CR₁₀R₂₀)_m-cyano, C(Z)NR₁₆R₂₆, C(Z)OR₈, (CR₁₀R₂₀)_m COR₈, (CR₁₀R₂₀)_mS(O)_mR₈, (CR₁₀R₂₀)_mOR₈, halo-substituted-C₁₋₄ alkyl, C₁₋₄ alkyl, (CR₁₀R₂₀)_mNR₁₀C(Z)R₈, (CR₁₀R₂₀)_mNR₁₀S(O)_mR₁₁, (CR₁₀R₂₀)_mNR₁₀S(O)_mNR₇R₁₇, (CR₁₀R₂₀)_mZC(Z)R₈ or (CR₁₀R₂₀)_mNR₁₆R₂₆;

and when one of R₁ and R₂ is an optionally substituted 4-pyrimidinyl ring, the ring is substituted by one or two substituents each of which is independently selected from C₁₋₄ alkyl, halo, C₁₋₄ alkoxy, C₁₋₄ alkylthio, NR₁₀R₂₀, or an N-heterocyclyl ring which ring has from 5 to 7 members and optionally contains an additional heteroatom selected from oxygen, sulfur or NR₂₂;

R₃ is X_C ;

X_C is hydrogen, -(CR₁₀R₂₀)_n (Y₂)_p, -(CR₁₀R₂₀)_n-C=C-(CR₁₀R₂₀)_n(Y₂)_p, (CR₁₀R₂₀)_n-C≡C(R₁₀R₂₀)_n-(Y₂)_p, or halosubstituted C₁₋₁₀alkyl;

p is 0 or an integer having a value of 1;

Z is oxygen or sulfur;

n is 0 or an integer having a value of 1 to 10;

n' is an integer having a value of 1 to 10;

m is 0, or the integer 1 or 2;

m' is 1 or 2;

m'' is 0 or an integer having a value of 1 to 5;

Y₁ is independently selected from hydrogen, C₁₋₅ alkyl, halo-substituted C₁₋₅ alkyl, halogen, or -(CR₁₀R₂₀)_nY₂;

Y₂ is halogen, OR₈, NO₂, S(O)_{m'}R₁₁, SR₈, S(O)_{m'}NR₈R₉, -NR₈R₉, O(CR₁₀R₂₀)_{n'}NR₈R₉, C(O)R₈, CO₂R₈, CO₂(CR₁₀R₂₀)_{n'} CONR₈R₉, ZC(O)R₈, CN, C(Z)NR₈R₉, NR₁₀C(Z)R₈, C(Z)NR₈OR₉, NR₁₀C(Z)NR₈R₉, NR₁₀S(O)_{m'}R₁₁, N(OR₂₁)C(Z)NR₈R₉, N(OR₂₁)C(Z)R₈, C(=NOR₂₁)R₈, NR₁₀C(=NR₁₅)SR₁₁, NR₁₀C(=NR₁₅)NR₈R₉, NR₁₀C(=CR₁₄R₂₄)SR₁₁, NR₁₀C(=CR₁₄R₂₄)NR₈R₉, NR₁₀C(O)C(O)NR₈R₉, NR₁₀C(O)C(O)OR₁₀, C(=NR₁₃)NR₈R₉, C(=NOR₁₃)NR₈R₉, C(=NR₁₃)ZR₁₁, OC(Z)NR₈R₉, NR₁₀S(O)₂CF₃, NR₁₀C(Z)OR₁₀, 5-(R₁₈)-1,2,4-oxadiazol-3-yl or 4-(R₁₂)-5-(R₁₈R₁₉)-4,5-dihydro-1,2,4-oxadiazol-3-yl;

R₅ is hydrogen, C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl or NR₇R₁₇, excluding the moieties SR₅ being SNR₇R₁₇ and SOR₅ being -SOH;

R₆ is C₁₋₄ alkyl, halo-substituted-C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl or C₃₋₅ cycloalkyl;

R₇ and R₁₇ is each independently selected from hydrogen or C₁₋₄ alkyl or R₇ and R₁₇ together with the nitrogen to which they are attached form a heterocyclic ring of 5 to 7 members which ring optionally contains an additional heteroatom selected from oxygen, sulfur or NR₂₂;

R₈ is hydrogen, heterocyclyl, heterocyclalkyl or R₁₁;

R₉ is hydrogen, C₁₋₁₀ alkyl, C₂₋₁₀ alkenyl, C₂₋₁₀ alkynyl, C₃₋₇ cycloalkyl, C₅₋₇ cycloalkenyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl or R₈ and R₉ may together with the nitrogen to which they are attached form a heterocyclic ring of 5 to 7 members which ring optionally contains an additional heteroatom selected from oxygen, sulfur or NR₁₂;

R₁₀ and R₂₀ is each independently selected from hydrogen or C₁₋₄ alkyl;

R₁₁ is C₁₋₁₀ alkyl, halo-substituted C₁₋₁₀ alkyl, C₂₋₁₀ alkenyl, C₂₋₁₀ alkynyl, C₃₋₇ cycloalkyl, C₅₋₇ cycloalkenyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl;

R₁₂ is hydrogen, -C(Z)R₁₃ or optionally substituted C₁₋₄ alkyl, optionally substituted aryl or optionally substituted aryl-C₁₋₄ alkyl;

R₁₃ is hydrogen, C₁₋₁₀ alkyl, cycloalkyl, heterocyclyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl;

R₁₄ and R₂₄ is each independently selected from hydrogen, alkyl, nitro or cyano;

R₁₅ is hydrogen, cyano, C₁₋₄ alkyl, C₃₋₇ cycloalkyl or aryl;

R₁₆ and R₂₆ is each independently selected from hydrogen or optionally substituted C₁₋₄ alkyl, optionally substituted aryl or optionally substituted aryl-C₁₋₄ alkyl, or together with the nitrogen which they are attached form a heterocyclic ring of 5 to 7 members which ring optionally contains an additional heteroatom selected from oxygen, sulfur or NR₁₂ ;

R₁₈ and R₁₉ is each independently selected from hydrogen, C₁₋₄ alkyl, substituted alkyl, optionally substituted aryl, optionally substituted arylalkyl or together R₁₈ and R₁₉ denote a oxygen or sulfur;

R₂₁ is hydrogen, a pharmaceutically acceptable cation, C₁₋₁₀ alkyl, C₃₋₇ cycloalkyl, aryl, aryl C₁₋₄ alkyl, heteroaryl, heteroarylalkyl, heterocyclyl, aroyl, or C₁₋₁₀ alkanoyl;

R₂₂ is R₁₀ or C(Z)-C₁₋₄ alkyl;

R₂₃ is C₁₋₄ alkyl, halo-substituted-C₁₋₄ alkyl, or C₃₋₅ cycloalkyl;

R₃₆ is hydrogen or R₂₃;

or a pharmaceutically acceptable salt thereof.

18 (new). The compound according to Claim 1 wherein X_C is hydrogen.

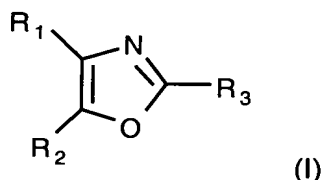
19 (new). The compound according to Claim 7 wherein R₃ is hydrogen, methyl, amino, or -NR₁₀C(O)R₈.

20 (new). The method according to Claim 11 wherein the cytokine mediated disease is arthritis, rheumatoid arthritis, rheumatoid spondylitis, osteoarthritis, traumatic arthritis, rubella arthritis, acute synovitis, gouty arthritis and other arthritic conditions, gout, sepsis, septic shock, endotoxic shock, gram negative sepsis, toxic shock syndrome, diabetes, atherosclerosis, adult respiratory distress syndrome, cerebral malaria, chronic pulmonary inflammatory disease, silicosis, pulmonary sarcoisosis, bone resorption diseases, reperfusion injury, thrombosis, glomerulonephritis, stroke, graft vs. host reaction, allograft rejections, fever and myalgias due to infection, cachexia secondary to infection or malignancy, cachexia secondary to acquired immune deficiency syndrome, keloid formation, scar tissue formation, eczema, psoriasis, Crohn's disease, inflammatory bowel disease, ulcerative colitis or pyresis.

21 (new). The compound according to Claim 17 which is 4-(4-Fluorophenyl)-5-(2-amino-pyrimidin-4-yl)oxazole; or a pharmaceutically acceptable salt thereof.

22 (new). The method according to Claim 11 wherein the compound is 4-(4-Fluorophenyl)-5-(2-amino-pyrimidin-4-yl)oxazole; or a pharmaceutically acceptable salt thereof.

23 (new). A compound of the formula:



wherein:

one of R₁ or R₂ is an optionally substituted aryl ring and the other of R₁ or R₂ is an optionally substituted 4-pyrimidinyl;

wherein when one of R₁ and R₂ is an optionally substituted aryl ring, the ring is substituted by one or two substituents, each of which is independently selected, and which, for a 4-phenyl, 4-naphth-1-yl or 5-naphth-2-yl substituent, is halo, cyano, C(Z)NR₇R₁₇, C(Z)OR₂₃, (CR₁₀R₂₀)_m COR₃₆, SR₅, SOR₅, OR₃₆, halo-substituted-C₁₋₄ alkyl, C₁₋₄ alkyl, ZC(Z)R₃₆, NR₁₀C(Z)R₂₃, or (CR₁₀R₂₀)_mNR₁₀R₂₀;

and which, for other positions of substitution, is halo, (CR₁₀R₂₀)_m-cyano, C(Z)NR₁₆R₂₆, C(Z)OR₈, (CR₁₀R₂₀)_m COR₈, (CR₁₀R₂₀)_mS(O)_mR₈, (CR₁₀R₂₀)_mOR₈, halo-substituted-C₁₋₄ alkyl, C₁₋₄ alkyl, (CR₁₀R₂₀)_mNR₁₀C(Z)R₈, (CR₁₀R₂₀)_mNR₁₀S(O)_mR₁₁, (CR₁₀R₂₀)_mNR₁₀S(O)_mNR₇R₁₇, (CR₁₀R₂₀)_mZC(Z)R₈ or (CR₁₀R₂₀)_mNR₁₆R₂₆;

and when one of R₁ and R₂ is an optionally substituted 4-pyrimidinyl ring, the ring is substituted by one or two substituents each of which is independently selected from C₁₋₄ alkyl, halo, C₁₋₄ alkoxy, C₁₋₄ alkylthio, NR₁₀R₂₀, or an N-heterocyclyl ring which ring has from 5 to 7 members and optionally contains an additional heteroatom selected from oxygen, sulfur or NR₂₂;

R₃ is -(CR₁₀R₂₀)_n R₄;

R₄ is Q-(Y₁)_t;

Q is an aryl or heteroaryl group;

t is an integer having a value of 1 to 3;

Z is oxygen or sulfur;

n is 0 or an integer having a value of 1 to 10;

n' is an integer having a value of 1 to 10;

m is 0, or the integer 1 or 2;

m' is 1 or 2;

m" is 0 or an integer having a value of 1 to 5;

Y₁ is independently selected from hydrogen, C₁₋₅ alkyl, halo-substituted C₁₋₅ alkyl, halogen, or -(CR₁₀R₂₀)_nY₂;

Y₂ is halogen, OR₈, NO₂, S(O)_m'R₁₁, SR₈, S(O)_m'NR₈R₉, -NR₈R₉, O(CR₁₀R₂₀)_n'NR₈R₉, C(O)R₈, CO₂R₈, CO₂(CR₁₀R₂₀)_n' CONR₈R₉, ZC(O)R₈, CN, C(Z)NR₈R₉, NR₁₀C(Z)R₈, C(Z)NR₈OR₉, NR₁₀C(Z)NR₈R₉, NR₁₀S(O)_m'R₁₁, N(OR₂₁)C(Z)NR₈R₉, N(OR₂₁)C(Z)R₈, C(=NOR₂₁)R₈, NR₁₀C(=NR₁₅)SR₁₁, NR₁₀C(=NR₁₅)NR₈R₉, NR₁₀C(=CR₁₄R₂₄)SR₁₁, NR₁₀C(=CR₁₄R₂₄)NR₈R₉, NR₁₀C(O)C(O)NR₈R₉, NR₁₀C(O)C(O)OR₁₀, C(=NR₁₃)NR₈R₉, C(=NOR₁₃)NR₈R₉, C(=NR₁₃)ZR₁₁, OC(Z)NR₈R₉, NR₁₀S(O)₂CF₃, NR₁₀C(Z)OR₁₀, 5-(R₁₈)-1,2,4-oxadiazol-3-yl or 4-(R₁₂)-5-(R₁₈R₁₉)-4,5-dihydro-1,2,4-oxadiazol-3-yl;

R₅ is hydrogen, C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl or NR₇R₁₇, excluding the moieties SR₅ being SNR₇R₁₇ and SOR₅ being -SOH;

R₆ is C₁₋₄ alkyl, halo-substituted-C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl or C₃₋₅ cycloalkyl;

R₇ and R₁₇ is each independently selected from hydrogen or C₁₋₄ alkyl or R₇ and R₁₇ together with the nitrogen to which they are attached form a heterocyclic ring of 5 to 7 members which ring optionally contains an additional heteroatom selected from oxygen, sulfur or NR₂₂;

R₈ is hydrogen, heterocyclyl, heterocyclalkyl or R₁₁;

R₉ is hydrogen, C₁₋₁₀ alkyl, C₂₋₁₀ alkenyl, C₂₋₁₀ alkynyl, C₃₋₇ cycloalkyl, C₅₋₇ cycloalkenyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl or R₈ and R₉ may together with the nitrogen to which they are attached form a heterocyclic ring of 5 to 7 members which ring optionally contains an additional heteroatom selected from oxygen, sulfur or NR₁₂;

R₁₀ and R₂₀ is each independently selected from hydrogen or C₁₋₄ alkyl;

R₁₁ is C₁₋₁₀ alkyl, halo-substituted C₁₋₁₀ alkyl, C₂₋₁₀ alkenyl, C₂₋₁₀ alkynyl, C₃₋₇ cycloalkyl, C₅₋₇ cycloalkenyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl;

R₁₂ is hydrogen, -C(Z)R₁₃ or optionally substituted C₁₋₄ alkyl, optionally substituted aryl or optionally substituted aryl-C₁₋₄ alkyl;

R₁₃ is hydrogen, C₁₋₁₀ alkyl, cycloalkyl, heterocyclyl, aryl, arylalkyl, heteroaryl or heteroarylalkyl;

R₁₄ and R₂₄ is each independently selected from hydrogen, alkyl, nitro or cyano;

R₁₅ is hydrogen, cyano, C₁₋₄ alkyl, C₃₋₇ cycloalkyl or aryl;

R₁₆ and R₂₆ is each independently selected from hydrogen or optionally substituted C₁₋₄ alkyl, optionally substituted aryl or optionally substituted aryl-C₁₋₄ alkyl, or together with the nitrogen which they are attached form a heterocyclic ring of 5 to 7 members

which ring optionally contains an additional heteroatom selected from oxygen, sulfur or NR₁₂ ;

R₁₈ and R₁₉ is each independently selected from hydrogen, C₁₋₄ alkyl, substituted alkyl, optionally substituted aryl, optionally substituted arylalkyl or together R₁₈ and R₁₉

denote a oxygen or sulfur;

R₂₁ is hydrogen, a pharmaceutically acceptable cation, C₁₋₁₀ alkyl, C₃₋₇ cycloalkyl, aryl, aryl C₁₋₄ alkyl, heteroaryl, heteroarylalkyl, heterocyclyl, aroyl, or C₁₋₁₀ alkanoyl;

R₂₂ is R₁₀ or C(Z)-C₁₋₄ alkyl;

R₂₃ is C₁₋₄ alkyl, halo-substituted-C₁₋₄ alkyl, or C₃₋₅ cycloalkyl;

R₃₆ is hydrogen or R₂₃;

or a pharmaceutically acceptable salt thereof.

24 (new). The compound according to Claim 23 wherein R₁ is a substituted 4-pyrimidinyl.

25 (new). The compound according to Claim 24 wherein the substituent is C₁₋₄ alkyl or NR₁₀R₂₀.

26 (new). The compound according to Claim 23 wherein R₁ or R₂ is an optionally substituted phenyl.

27 (new). The compound according to Claim 26 wherein one or more of the optional substituents are independently selected from halogen or methoxy.

28 (new). The compound according to Claim 23 wherein Q is phenyl.

29 (new). The compound according to Claim 28 wherein the phenyl is substituted by -SR₈ or -S(O)_mR₁₁.

30 (new). A pharmaceutical composition comprising a pharmaceutically acceptable carrier or diluent and a compound according to Claim 23.

31 (new). A method of treating the inflammatory component of a cytokine mediated disease in an animal in need thereof which method comprises administering to said animal an effective cytokine mediating amount of a compound according to Claim 23.

32 (new). The method according to Claim 31 wherein the cytokine mediated disease is asthma, adult respiratory distress syndrome, stroke, bone resorption diseases, arthritic joint conditions, and other inflammatory diseases.

33 (new). The method according to Claim 31 wherein mediation of the cytokine disease is by Interleukin-1 (IL-1).

34 (new). The method according to Claim 31 wherein mediation of the cytokine disease is by Tumor Necrosis Factor (TNF).

35 (new). The method according to Claim 31 wherein the cytokine mediated disease is arthritis, rheumatoid arthritis, rheumatoid spondylitis, osteoarthritis, traumatic arthritis, rubella arthritis, acute synovitis, gouty arthritis and other arthritic conditions, gout, sepsis, septic shock, endotoxic shock, gram negative sepsis, toxic shock syndrome, diabetes, atherosclerosis, adult respiratory distress syndrome, cerebral malaria, chronic pulmonary inflammatory disease, silicosis, pulmonary sarcoidosis, bone resorption diseases, reperfusion injury, thrombosis, glomerulonephritis, stroke, graft vs. host reaction, allograft rejections, fever and myalgias due to infection, cachexia secondary to infection or malignancy, cachexia secondary to acquired immune deficiency syndrome, keloid formation, scar tissue formation, eczema, psoriasis, Crohn's disease, inflammatory bowel disease, ulcerative colitis or pyretic.

36 (new). A method of treating inflammation in a mammal in need thereof which comprises administering to said mammal an effective amount of a compound according to Claim 23.